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United States  
Department of  
Agriculture

Soil  
Conservation  
Service

Spokane,  
Washington

# Water Supply Outlook for Washington

as of APRIL 1, 1985



## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: "Snow scene along trail to Mt. Hood test site snow course"

### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P.O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th St., Boise, Idaho 83702
Montana	P.O. Box 98, Bozeman, Montana 59715
Nevada	P.O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4402 Federal Bldg., 125 South State St., Salt Lake City, Utah 84147
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P.O. Box 2440, Casper, Wyoming 82601

### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 — for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 — for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 — and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



# **WATER SUPPLY OUTLOOK FOR WASHINGTON**

**and**

**FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS**

**ISSUED BY**

**PETER C. MYERS**  
**Chief**  
**SOIL CONSERVATION SERVICE**  
**WASHINGTON, D.C.**

**RELEASED BY**

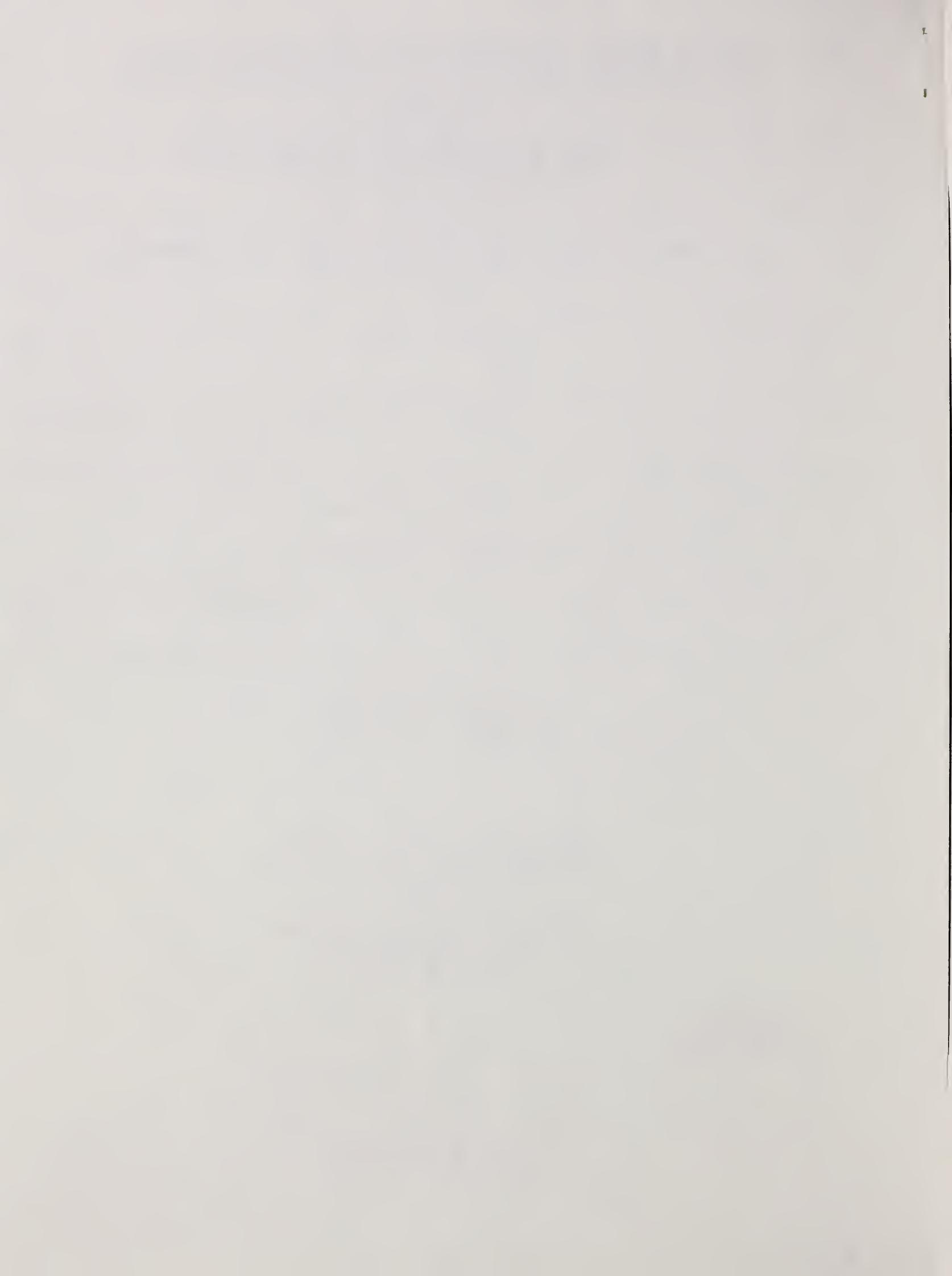
**LYNN A. BROWN**  
**STATE CONSERVATIONIST**  
**SOIL CONSERVATION SERVICE**  
**SPOKANE, WASHINGTON**

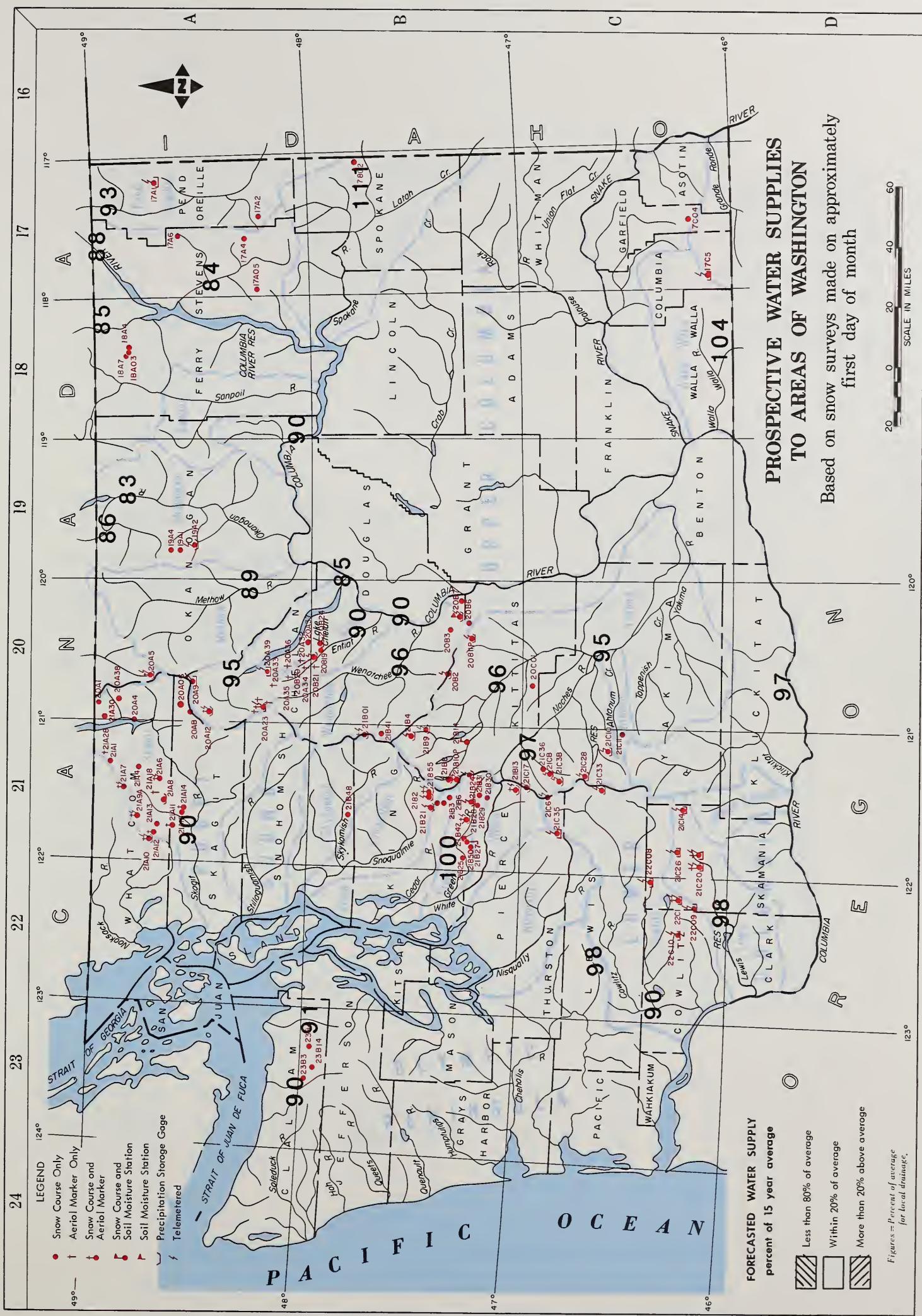
**FORECASTS BY**

**SOIL CONSERVATION SERVICE**  
**WATER SUPPLY FORECASTING STAFF, WNTC**  
**PORTLAND, OREGON**  
**and**  
**NATIONAL WEATHER SERVICE**  
**RIVER FORECAST CENTER**  
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**REPORT PREPARED BY**

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**SPOKANE, WASHINGTON 99201**





# INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.						
UPPER COLUMBIA DRAINAGE																							
Pend Oreille River	17A2	7	31N	43E	5250	Spruce Springs	17C4	9	8N	40E	5700	Dock Butte	21A1A	8	36N	8E	3800						
Boyer Mountain	17ATSP	24	37N	44E	5000	Tauchet No. 2	17C5SP	6	7N	40E	5530	Easy Pass	21A7A	19	39N	11E	5200						
Bunchgrass Meadow						Tauchet River						Jasper Pass	21A6A	17	38N	11E	5400						
Kettle River	18A7	20	38N	35E	4600	Lewis River	22C0SP	26	8N	5E	3200	Marren Lake	21A9A	23	38N	10E	3600						
Summit G. S.	18A3	28	39N	35E	4070	June Lake	21C26SP	8	9N	7E	3800	Mount Blum	21A12A <sub>2</sub>	27	38N	10E	3800						
Butte Creek	18A4	26	39N	35E	3395	Lane Pine Shelter	22C1SP	35	9N	5E	3000	Rocky Creek	21A10A <sub>2</sub>	20	37N	8E	2100						
Goat Creek						Plains of Abraham	21C20SP	16	8N	7E	4400	Schreibers Meadow	21A10A <sub>2</sub>	18	37N	8E	3400						
Ragged Ridge	17B02	12	27N	45E	3333	Spencer Meadow	21C13SP	14	7N	8E	4250	S. F. Thunder Creek	21A14A <sub>2</sub>	20	36N	9E	2200						
Baird	17A5	19	36N	42E	3215	Surprise Lakes	21C13SP					Sulphur Creek	21A13	22	37N	8E	1600						
Stranger Mountain	17A5	26	31N	38E	4990	Cowlitz River	21C6	15	16N	10E	5300	Three Mile Creek	21A15	18	36N	9E	1600						
Chevelah	17A4	11	32N	41E	4925	Coyuse Pass	21C33SP	11	13N	11E	5900	Watson Lakes	21A8P	25	37N	9E	4500						
LOWER COLUMBIA DRAINAGE																							
Okanagan River	19A1	30	37N	24E	5700	Pigtail Peak	21C14SP	36	10N	10E	4050	OLYMPIC PENINSULA											
Mutian Creek Na. 1	19A4	19	37N	24E	6000	Pota Hill	22C10SP	12	8N	4E	4050	Dungeness River	23B3	36	29N	7W	4500						
Mutian Creek Na. 2	19A2SP	33	37N	24E	4500	Sheep Canyon	22C08SP	9	10N	6E	3280	Dungeness River											
Harts Pass	20A5SP	7	37N	18E	6500	Strawberry						Deer Park	23B4	1	28N	5W	5200						
Lyman Lake	20A23SP	18	31N	16E	5900	PUGET SOUND DRAINAGE																	
Park Creek Ridge	20A12SP	18	34N	16E	4600	Paradise Park (New)	21C35SP	13	15N	8E	5500	White River	21B13SP	30	18N	11E	6000						
Rainy Pass	20A5SP	21	35N	17E	4780	Green River	21B25	27	20N	11E	1800	Charley Creek	21B25	27	20N	8E	1200						
Mirrar Lake	20A39	30	31N	18E	5600	Airstrip	21B24P	18	20N	11E	1800	Cougar Mountain	21B27	21	21N	9E	3200						
ENTIAT RIVER																							
Brief	20B19	34	28N	19E	1600	Paradise Park (New)	21C35SP	13	15N	8E	5500	Gross Mountain No. 2	21B28	14	20N	8E	2100						
Entiat Meadows	20A33a	28	31N	17E	4540	Corral Pass	21B13SP	30	18N	11E	6000	Lester Creek	21B29	36	20N	10E	4000						
Entiat River Trail	20A33a	2	29N	17E	3325	White River	21B13SP	30	18N	11E	6000	Lynn Lake	21B30	22	20N	8E	4700						
Fox Camp	20A33a	17	30N	18E	6510	Green River	21B25	27	20N	11E	1800	Sawmill Ridge	21B31	5	19N	11E	3840						
Pipe Ridge	20B20	22	29N	18E	3540	Airstrip	21B25	27	20N	11E	1800	Stampede Pass	21B30	25	21N	11E	3840						
Pipe Ridge Snow Pillow	20B24SP	22	29N	18E	3540	Charley Creek	21B25	27	20N	11E	1800	Twin Camp	21B30	18	19N	11E	4100						
Pugh Ridge	20A37a	20	29N	19E	6200	Cougar Mountain	21B27	14	20N	8E	2100	SNOQUALMIE RIVER											
Shady Pass	20A33a	21	30N	17E	3910	Gross Mountain No. 3	21B28	12	20N	8E	2100	Lynn Lake	21B31	5	19N	11E	4700						
Snow Brushy	20B21a	10	28N	18E	4900	Lester Creek	21B29	36	20N	10E	4000	Sawmill Ridge	21B30	25	21N	11E	3840						
Tammy Creek						Stampede Pass	21B30	18	19N	11E	4100	Twin Camp	21B30	18	19N	11E	4100						
WENATCHEE RIVER																							
Berne-Mill Creek (New)	21B41SP	13	26N	14E	3240	Cedar River	21B3	10	21N	10E	3300	City Cabin	21B21P	30	22N	10E	3300						
Blewett Pass No. 2	20B22SP	35	22N	17E	4270	Alpine Meadow	21B48	31	27N	9E	3500	Olellie Meadow	21B22P	19	22N	11E	3650						
Stevens Pass	21B15P	14	26N	13E	4070	Olellie Meadow	21B52SP	20	22N	11E	3700	Olellie Meadow	21B52SP	20	22N	11E	3700						
Traugh #2	20B25SP	10	26N	20E	5310	SNOQUALMIE RIVER																	
Beehive Springs	20B3	12	21N	19E	4400	SNOQUALMIE RIVER																	
Stemilt Creek	20B6	30	21N	20E	5000	Beaver Creek Trail	21A4	35	39N	12E	2200	Brown Top	21A26	9	39N	12E	3680						
Upper Wheeler	20B7SP	30	21N	20E	4400	Devil's Park	20A4	34	38N	16E	5900	Freezeout Creek Trail	20A38	14	40N	16E	3500						
YAKIMA RIVER																							
Ahtanum R. S.	21C11	24	12N	14E	3100	Freezeout Creek Trail	20A38	8	40N	16E	5000	Granite Creek	20A06	25	36N	16E	3500						
Big Boulder Creek	21B9SP	35	23N	14E	3200	Watson Lakes	21A12A <sub>2</sub>	20	22N	11E	4200	Meadows Cabins	20A8	29	36N	14E	1900						
Bumping Lake	21C8P	23	16N	12E	3450	New Hazomeen Lake	21A30	19	40N	14E	2800	Thunder Basin	20A07	10	35N	14E	4200						
Bumping Lake New	21C36	13	16N	12E	3400	WHITE PASS																	
Bumping Ridge	21C38SP	9	15N	12E	4600	WHITE PASS																	
Fish Lake	21B4SP	28	24N	14E	3371	WHITE PASS																	
Green Lake	21C10SP	3	12N	13E	4000	WHITE PASS																	
Grouse Camp	20B11SP	29	21N	19E	5385	WHITE PASS																	
Lake Cle Elum	21B14M	15	20N	14E	2200	WHITE PASS																	
Morse Lake	21C17SP	6	16N	11E	5400	WHITE PASS																	
Tunnel Avenue	21B8P	13	21N	11E	2450	WHITE PASS																	
White Pass (East Side)	21C28SP	2	13N	11E	4500	WHITE PASS																	

LEGEND

21A7

Snow Course Only

21A7a

Aerial Marker Only

21A7m

Snow Course And Aerial Marker

21A7M

Snow Course And Soil Moisture Station

21A7P

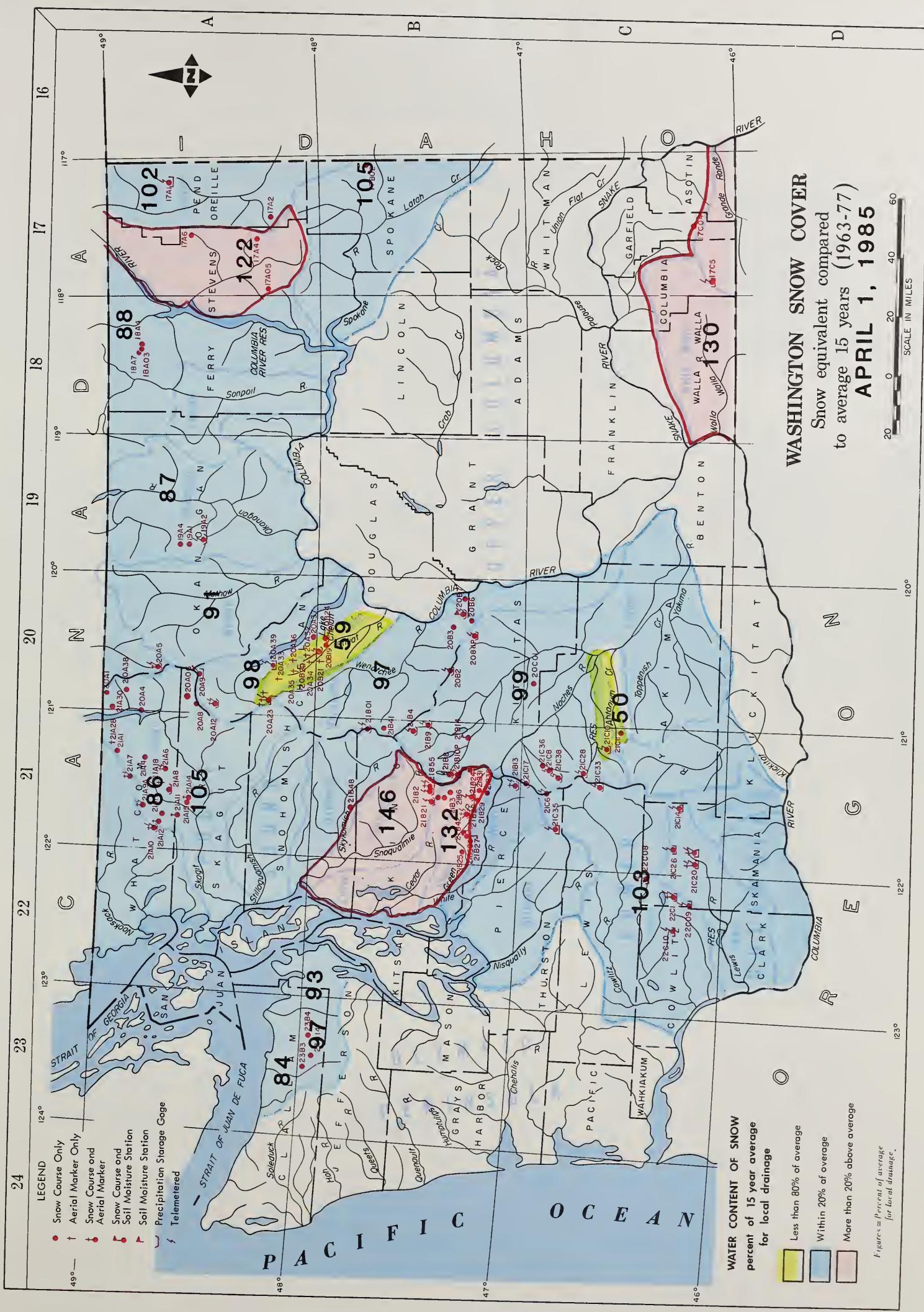
Soil Moisture Station

21A7SP

Precipitation Storage Gauge

21A7TP

Snow Pillow



INDEX to WASHINGTON SNOW COURSES,  
SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

## WATER SUPPLY OUTLOOK

State of Washington

APRIL 1, 1985

The cold, relatively dry trend established in early January continued through March. Changes in Washington water supply forecasts for April 1 include some downward forecasts for the main stem Columbia River and other streams in the northeast section. Supplies are expected to be near average over the entire state. The mountain snowpack was generally near average over most of Washington. Precipitation for March continued to be below average. Reservoir storage has not changed materially over the March 1 report. Near to below average temperatures have held streamflows to below normal.

### COVER

April snow cover changed only slightly from those measured during the March 1st period. Snow cover is still showing slightly below average for the lower elevations in the Cascades. The higher elevation snow courses in the Cascades and the snow courses in the eastern portion of the state are near average to slightly above average. Drainage areas in the state with above average snowpack include the Walla Walla, Spokane, and Colville rivers. Poor visibility in the Green River and other parts of the Puget Sound reduced the number of snow surveys available in that area. Ahtanun Creek and the Entiat River continue below average with snow cover of 50% and 59%.

### PRECIPITATION

March precipitation was below average over most of the state, with the exception of Southeastern Washington at 122% the only area above average. Northeastern Washington had 65% of average while the North Central area had 77%. The lowest amount of precipitation fell in the North Central area with .50 inches during March. The west side of the Cascades was also below average with the north having 76% and the south 88%.

### RESERVOIR STORAGE

Washington's stored water supplies are fair within the irrigated sections of the state. Below normal temperatures have kept area streamflows very low causing some power companies to draw from reservoir storage for winter demand. Irrigation reservoirs are storing 541,800 acre feet of water in the Yakima, compared to the March 1 average of 741,500, or 73% of normal. The reservoirs in the Okanogan Irrigation District are near capacity. Lake Chelan at 138,600 acre-feet, is 47% of normal. Power reservoirs in the Puget Sound area are at 66% of average for April 1.

### STREAMFLOW

March continued much like January and February with below normal temperatures during most of the month, slowing the snowmelt and keeping streamflows low. Streams in the state had the following average flows for March; the Pend Oreille River at 55%, Spokane River at 54%, Yakima River at 58% and the Wenatchee River at 47%. The Walla Walla River had the nearest to average flow with 93%, while the Skykomish river was the lowest with 46% of normal. Temperatures have been near or below average. The following stations reported below average for March, Spokane -2, Astoria -2, and Seattle -2. Forecasted streamflows for the main stem Columbia River at Birchbank have been reduced from 96% of normal to 88%. Some other streams having reduced forecasted flows include the Colville from 94% to 84%; Pend Oreille from 97% to 93%; Okanogan from 103% to 97%; and the Cowlitz from 101% to 90%.

STREAMFLOW FORECASTS - APRIL 1985

THE FOLLOWING SUMMARIZED RUNOFF FORECASTS ARE BASED PRINCIPALLY ON MOUNTAIN SNOW COVER AND ON THE ASSUMPTION THAT PRECIPITATION AND TEMPERATURE WILL BE NEAR AVERAGE FROM THE PRESENT TIME TO THE END OF THE FORECAST PERIOD. APPRECIABLE DEVIATIONS FROM NORMAL TEMPERATURE AND/OR PRECIPITATION WILL CORRESPONDINGLY MODIFY THESE FORECASTS. THESE FORECASTS ARE MADE AS A PRODUCT OF THE COOPERATIVE EFFORTS OF THE SOIL CONSERVATION SERVICE AND THE NATIONAL WEATHER SERVICE. STREAMFLOW FIGURES FOR 1982-1984 ARE PRELIMINARY AND SUBJECT TO REVISION.

SEASONAL STREAMFLOW IN THOUSANDS OF ACRE-FEET

BASIN, STREAM AND STATION	FORECAST RUNOFF 1985	% 20-YR. AVG.	FORE- CAST PERIOD	1984	1983	1982	20-YR AVERAGE 61-80
<b>COLUMBIA RIVER SYSTEM /1/</b>							
COLUMBIA RIVER	39300	88	APR-SEPT	39200	43225	48575	44605
AT BIRCHBANK	31500	88	APR-JULY	30400	34569	38210	35705
	22900	88	APR-JUNE	20700	24281	27454	26027
COLUMBIA RIVER	60000	90	APR-SEPT	62500	46662	56425	66841
AT GRAND COULEE	50800	90	APR-JULY	51900	34933	43821	56169
	39600	90	APR-JUNE	39400	65970	32610	44036
COLUMBIA RIVER	66400	91	APR-SEPT	66300	44560	79386	72781
BL. ROCK ISLAND	56600	92	APR-JULY	55600	58672	66629	61601
	44000	91	APR-JUNE	42200	69844	49348	48384
COLUMBIA RIVER	97700	97	APR-SEPT	107700	103682	118503	101000
AT THE DALLES	84200	97	APR-JULY	92700	88273	101631	86500
	68000	97	APR-JUNE	74600	70038	80122	70100
<b>PEND OREILLE RIVER SYSTEM</b>							
PEND OREILLE	14400	93	APR-SEPT	12980	12841	17721	15425
BL. BOX CANYON	13200	93	APR-JULY	11780	11482	16324	14156
	11400	93	APR-JUNE	9895	9226	13306	12227
<b>KETTLE RIVER SYSTEM</b>							
KETTLE RIVER	1550	85	APR-SEPT	2438	2709	2330	1829
NR LAURIER	1470	85	APR-JULY	2327	2534	2174	1738
	1350	85	APR-JUNE	2004	2251	1747	1581
COLVILLE RIVER	113	84	APR-SEPT	243	182	160	134
AT KETTLE FALLS	103	84	APR-JULY	221	161	161	123
	96	84	APR-JUNE	197	144	132	114

/1/ OBSERVER FLOW CORRECTED FOR STORAGE IN ANY OF THE FOLLOWING RESERVOIRS WHICH ARE ABOVE THE STATION: KOOTENAY LAKE, HUNGRY HORSE, FLATHEAD LAKE, PEND OREILLE LAKE, F.D. ROOSEVELT LAKE, LAKE CHELAN, COEUR D'ALENE LAKE, BROWNLEE, NOXON RESERVOIR AND PUMPAGE AT F. D. ROOSEVELT LAKE.

## SEASONAL STREAMFLOW IN THOUSANDS OF ACRE-FEET

BASIN, STREAM AND STATION	FORECAST RUNOFF 1985	% 20-YR. AVG.	FORE- CAST PERIOD	1984	1983	1982	20-YR AVERAGE 61-80
<b>SPOKANE RIVER SYSTEM</b>							
SPOKANE RIVER	3175	111	APR-SEPT	2808	2243	2238	2848
AT POST FALLS/2/	3070	111	APR-JULY	2647	2067	2145	2754
<b>OKANOGAN RIVER SYSTEM</b>							
SIMILKAMEEN R.	1260	86	APR-SEPT	1214	1490	1638	1462
NR NIGHTHAWK	1175	86	APR-JULY	1116	1356	1491	1365
	1000	86	APR-JUNE	894	1155	1166	1161
OKANOGAN RIVER	1370	83	APR-SEPT	1688	2170	2046	1644
NR TONASKET	1240	83	APR-JULY	1492	1891	1712	1497
	1050	83	APR-JUNE	1179	1569	1306	1262
<b>METHOW RIVER SYSTEM</b>							
METHOW RIVER	870	89	APR-SEPT	976	1354	1203	980
NR PATEROS	810	89	APR-JULY	886	1243	1120	908
	690	89	APR-JUNE	722	1094	918	773
<b>CHELAN RIVER SYSTEM</b>							
CHELAN RIVER	1020	85	APR-SEPT	1079	1261	1376	1203
AT CHELAN /3/	900	85	APR-JULY	946	1104	1223	1055
	700	85	APR-JUNE	688	901	958	826
STEHEKIN RIVER	820	95	APR-SEPT	736		938	860
AT STEHEKIN	690	95	APR-JULY	608	727	800	727
	525	95	APR-JUNE	411	572	603	553
ENTIAT RIVER	212	90	APR-SEPT	231	292	282	235
NR ARDENVOIR	192	90	APR-JULY	207	263	258	213
	155	90	APR-JUN	152	221	206	172
<b>WENATCHEE RIVER SYSTEM</b>							
WENATCHEE RIVER	1220	96	APR-SEPT		GAGE ABANDONED		1270
NR PLAIN	1090	96	APR-JULY				1136
	860	96	APR-JUNE				899
WENATCHEE RIVER	1660	97	APR-SEPT	1541	1590	2013	1712
AT PESHASTIN	1500	97	APR-JULY	1385	1432	1791	1545
	1200	97	APR-JUNE	1022	1191	1429	1237
STEMILT BASIN	*130	94	MAY-SEPT		GAGE ABANDONED		**138
NR WENATCHEE							
ICICLE CREEK	340	92	APR-SEPT		GAGE ABANDONED		**370
NR LEAVENWORTH	313	92	APR-JULY				**340
	250	93	APR-JUNE				**270

\* THOUSANDS OF MINERS' INCHES.

\*\* AVERAGE COMPUTED FOR 1963-1977.

/2/ FORECASTS MADE BY JERRY BEARD, SOIL CONSERVATION SERVICE, BOISE, IDAHO. OBSERVED FLOW CORRECTED FOR STORAGE IN COEUR D'ALENE LAKE.

/3/ OBSERVED FLOW CORRECTED FOR STORAGE IN LAKE CHELAN.

SEASONAL STREAMFLOW IN THOUSANDS OF ACRE-FEET							
BASIN, STREAM AND STATION	FORECAST RUNOFF 1985	% AVG.	FORE- CAST PERIOD	1984	1983	1982	20-YR AVERAGE 61-80
<b>YAKIMA RIVER SYSTEM</b>							
YAKIMA RIVER	133	96	APR-SEPT	133	109	152	139
NR MARTIN /4/	123	96	APR-JULY	123	96	138	128
	107	96	APR-JUNE	107	81	121	111
YAKIMA RIVER	905	96	APR-SEPT	917	733	1100	943
AT CLE ELUM /5/	820	96	APR-JULY	825	659	1010	854
	705	96	APR-JUNE	678	589	883	734
YAKIMA RIVER	1990	95	APR-SEPT	2069	2221	2434	2096
NR PARKER /6/	1800	95	APR-JULY	1779	1958	2193	1898
	1580	95	APR-JUNE	1491	1722	1909	1667
KACHESS RIVER	117	97	APR-SEPT	119	105	134	121
NR EASTON /7/	112	97	APR-JULY	108	96	126	115
	98	97	APR-JUNE	91	84	110	101
CLE ELUM RIVER	444	96	APR-SEPT	442	421	516	463
NR ROSLYN /8/	405	96	APR-JULY	397	381	468	422
	340	96	APR-JUNE	310	324	392	353
BUMPING RIVER	138	97	APR-SEPT	137	137	161	142
NR NILE /9/	125	97	APR-JULY	127	128	147	129
	104	97	APR-JUNE	102	109	123	107
AMERICAN RIVER	120	97	APR-SEPT	114	157	140	124
NR NILE	110	97	APR-JULY	104	144	130	113
	91	97	APR-JUNE	81	120	109	94
TIETON RIVER/10/	236	96	APR-SEPT	245	286	277	246
AT TIETON DAM	200	96	APR-JULY	198	239	239	207
	158	96	APR-JUNE	149	193	192	165
NACHES RIVER	840	97	APR-SEPT	812	966	998	867
NR NACHES /11/	760	97	APR-JULY	732	881	945	784
	647	97	APR-JUNE	601	770	775	667
AHTANUM CREEK	45	96	APR-SEPT	34	67	62	47
NR TAMPICO /12/	41	95	APR-JULY	29	61	58	43
	36	97	APR-JUNE	24	54	51	37

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/4/ OBSERVED FLOW CORRECTED FOR STORAGE IN LAKE KEECHELUS.

/5/ OBSERVED FLOW CORRECTED FOR STORAGE IN KEECHELUS, KACHESS, AND CLE ELUM LAKES AND DIVERSION BY KITTITAS CANAL.

/6/ OBSERVED FLOW CORRECTED FOR STORAGE IN KEECHELUS, KACHESS, CLE ELUM, BUMPING, AND RIMROCK LAKES AND DIVERSIONS BY ROSA, UNION GAP, NEW RESERVATION, OLD RESERVATION AND SUNNYSIDE CANALS.

/7/ OBSERVED FLOW CORRECTED FOR STORAGE IN LAKE KACHESS.

/8/ OBSERVED FLOW CORRECTED FOR STORAGE IN LAKE CLE ELUM.

/9/ OBSERVED FLOW CORRECTED FOR STORAGE IN BUMPING LAKE.

/10/ OBSERVED FLOW CORRECTED FOR STORAGE IN RIMROCK LAKE.

/11/ OBSERVED FLOW CORRECTED FOR STORAGE IN BUMPING AND RIMROCK LAKES AND DIVERSIONS BY TIETON, SELAH VALLEY, WAPATOX CANALS AND CITY OF YAKIMA.

/12/ OBSERVED FLOW OF NORTH AND SOUTH FORKS (COMBINED).

SEASONAL STREAMFLOW IN THOUSANDS OF ACRE-FEET							
BASIN, STREAM FORECAST AND STATION	RUNOFF 1985	% 20-YR. AVG.	FORE-CAST PERIOD	1984	1983	1982	20-YR AVERAGE 61-80
<b>LOWER COLUMBIA RIVER SYSTEM</b>							
MILL CREEK	18.2	104	APR-SEPT	23.46	13.48	24.62	**17.50
AT WALLA WALLA	18.0	104	APR-JULY	23.08	13.39	24.48	**17.33
	17.8	104	APR-JUNE	22.24	13.36	21.63	**17.15
LEWIS RIVER	1230	98	APR-SEPT	1284	1255	1170	1249
AT ARIEL /13/	1065	98	APR-JULY	1141	1046	1030	1086
	940	98	APR-JUNE	1012	821	927	961
COWLITZ RIVER	1990	98	APR-SEPT	2080	1935	4936	2038
BL MAYFIELD DAM	1740	98	APR-JULY	1860	1754	1963	1778
/14/	1470	98	APR-JUNE	1570	1424	1722	1502
COWLITZ RIVER	2400	90	APR-SEPT	3770	2618	2655	2673
AT CASTLE ROCK	2090	90	APR-JULY	3370	2195	2363	2323
/14/	1782	90	APR-JUNE	2860	1739	2080	1980
<b>OLYMPIC PENINSULA</b>							
<b>DUNGENESS RIVER SYSTEM</b>							
DUNGENESS RIVER	146	91	APR-SEPT		197	196	160
NR SEQUIM	118	91	APR-JULY		158	163	130
	88	91	APR-JUNE		117	117	97
<b>ELWHA RIVER SYSTEM</b>							
ELWHA RIVER	500	91	APR-SEPT	469	538	607	**553
NR PORT ANGELES	410	91	APR-JULY	383	448	512	**454
<b>PUGET SOUND</b>							
<b>SKAGIT RIVER SYSTEM</b>							
AT NEWHALEM /15/	2170	97	APR-SEPT	1378	1531	1880	**2356
	1815	97	APR-JULY	997	1061	1439	**1972
	1365	97	APR-JUNE	621	698	1004	**1485
<b>GREEN RIVER SYSTEM</b>							
GREEN RIVER BL	316	100	APR-SEPT	275	190	227	**316
HOWARD HANSEN DAM	284	100	APR-JULY	243	145	195	**284
/16/	256	100	APR-JUNE	217	107	174	**256
<b>CEDAR RIVER SYSTEM</b>							
CEDAR RIVER	93	100	APR-SEPT	86	66	80	**93
NR CEDAR FALLS							

/13/ OBSERVED FLOW CORRECTED FOR STORAGE IN LAKE MERWIN, YALE AND SWIFT RESERVOIRS.

/14/ OBSERVED FLOW CORRECTED FOR STORAGE IN RIFFE LAKE AND MAYFIELD RESERVOIR.

/15/ OBSERVED FLOW CORRECTED FOR STORAGE IN DIABLO, ROSS AND GORGE RESERVOIRS.

/16/ OBSERVED FLOW CORRECTED FOR STORAGE IN HOWARD HANSON DAM.

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of washington stream basins presents the water content of the snow about APRIL 1, 1985, as percent of the same date in 1984 and average of record.

Tributary Basin	No. of Courses	1985 Snow Water Expressed as percent of	
		1984	Average 1961-80
<u>UPPER COLUMBIA BASIN</u>			
Pend Oreille	11	128	102
Kettle	10	96	88
Colville	3	115	122
Spokane	7	153	105
Okanogan	24	108	87
Methow	2	122	91
Chelan	4	106	98
Entiat	9	94	59
Wenatchee	9	140	97
Yakima	15	126	99
Ahtanum	2	69	50
<u>LOWER COLUMBIA BASIN</u>			
Mill Creek	1	130	130
Cowlitz	7	119	103
<u>PUGET SOUND</u>			
White	3	107	90
Green	10	173	115
Snoqualmie	1	224	146
Skykomish	2	124	105
Skagit	13	148	86
Baker	0		
<u>OLYMPIC PENNINSULA</u>			
Morse	1	123	97
Elwha	1	140	84
Dungeness	1	171	93

RESERVOIR STORAGE - 1000 Acre Feet

BASIN OR STREAM	RESERVOIR	USABLE 1/ CAPACITY	1985	Measured (APRIL)		
				1984	1983	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	96.1	194.4	163.3	121.6
Columbia	Franklin D. Roosevelt Lake	5232.0	992.0	4455.5	1864.1	1260.0
Columbia	Banks Lake	714.9	672.2	864.8	690.9	590.8
Okanogan	Conconully Reservoir	13.0	13.0	13.0	13.0	7.2
Okanogan	Conconully Lake	10.5	10.4	10.4	10.4	7.5
Chelan	Lake Chelan	676.1	138.6	296.4	295.1	294.2
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	90.3	145.7	122.3	108.8
Kachess	Kachess Lake	239.0	163.6	221.6	223.3	189.8
Cle Elum	Lake Cle Elum	436.9	191.4	363.2	364.4	292.1
Bumping	Bumping Lake	33.7	3.8	17.6	7.0	8.6
Tieton	Rimrock Lake	198.0	92.7	166.3	145.3	142.2
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1404.1	468.2	887.3	712.9	754.4
Skagit	Diablo Reservoir	90.6	84.6	83.8	88.0	85.7
Skagit	Gorge Reservoir	9.8	8.0	7.5	8.4	8.0

1/ Based on Active Storage  
\* 15-yr. Average 1963-1977

PRECIPITATION 1/

Division Average Observations and Departures

Drainage Divisions	Fall		Winter	
	Sept-Oct Observed	1984 2/ Departures	Nov. 1984 - Observed	Mar. 1985 2/ Departures
Northeastern Wash	1.83	-0.65	9.02	-0.23
Southeastern Wash	2.22	-0.29	10.00	-0.20
East slope Cascade	3.24	-1.51	20.04	-7.31
North Central Wash	1.54	-0.05	4.78	-1.58
Northwest Cascade	11.98	-1.23	40.18	-15.10
Southwest Cascade	8.89	-4.59	28.96	-11.51

Northeastern Washington	- Lower Spokane, Colville, Sanpoil, and Lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon, and Palouse Drainages
East Slope Cascades	- Yakima, Wenatchee, and Chelan Drainages
North Central Washington	- Methow and Okanogan Drainages
Northwest Slope Cascades	- Puget Sound Drainages
Southwest Slope Cascades	- Lower Columbia Drainages

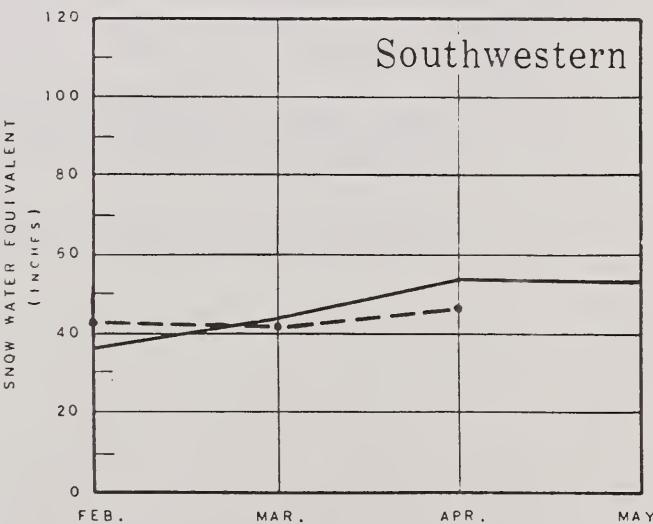
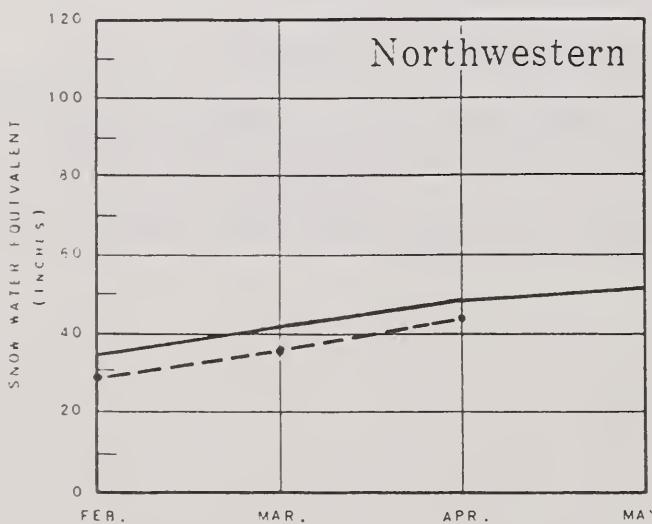
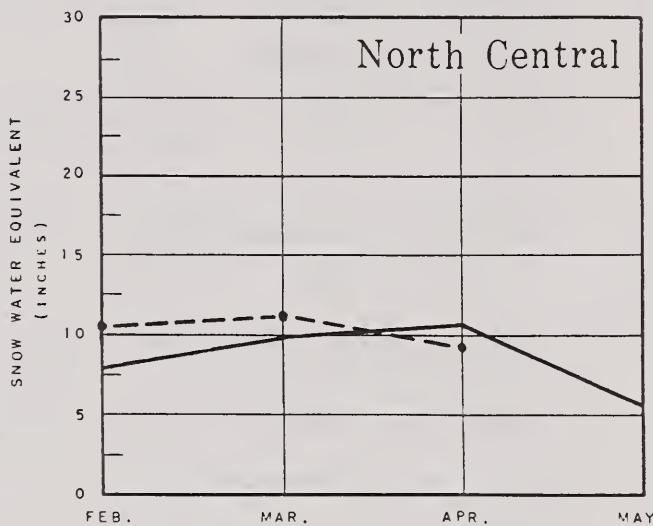
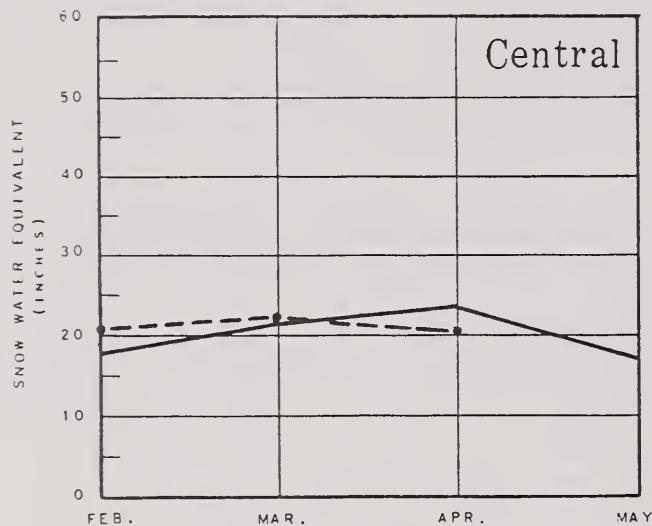
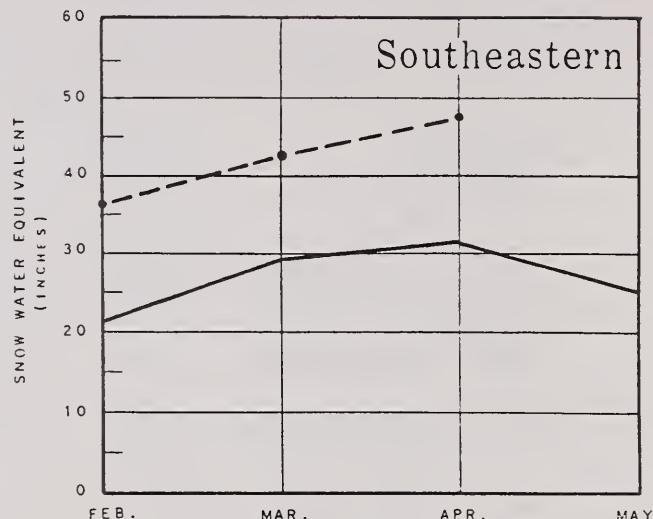
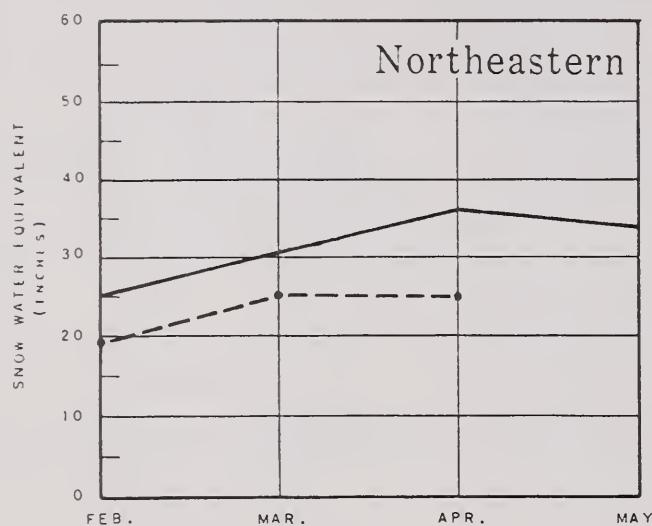
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorological Services of Canada and the National Weather Service

2/ - Departure from 20-year (1961-1980) drainage division average

# WASHINGTON SNOW COVER

1985

## DRAINAGE AREAS



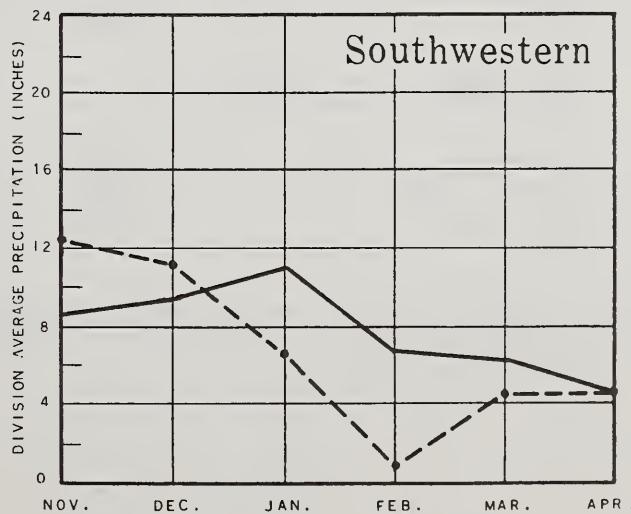
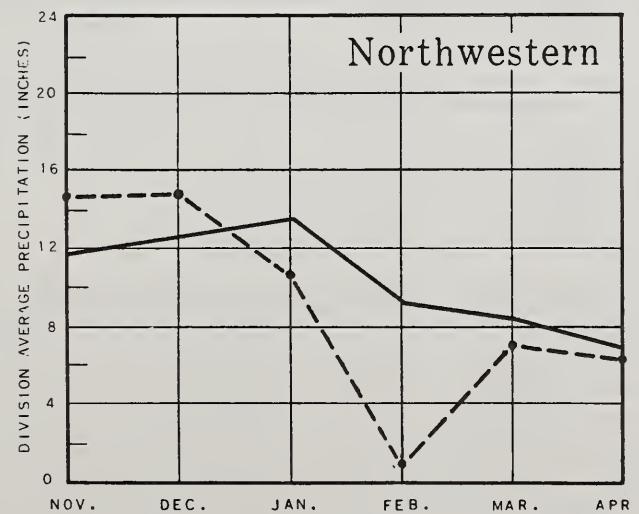
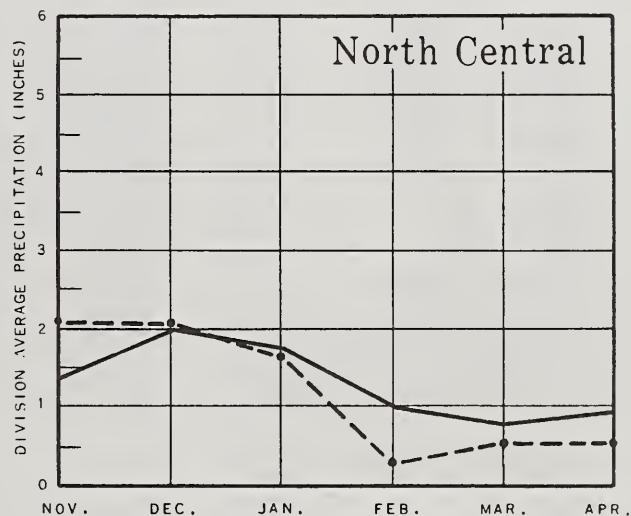
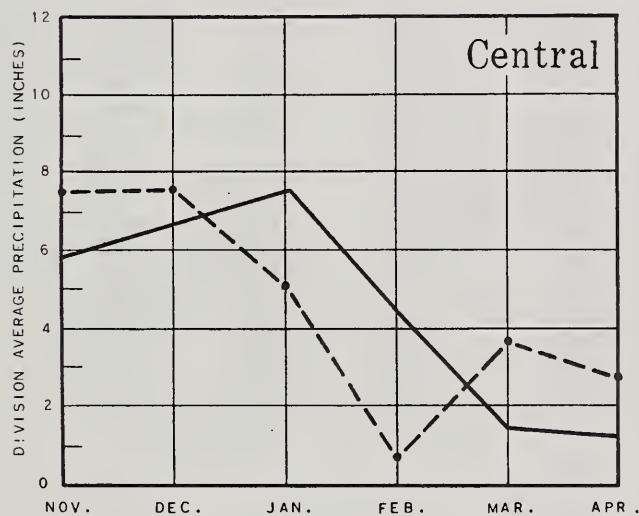
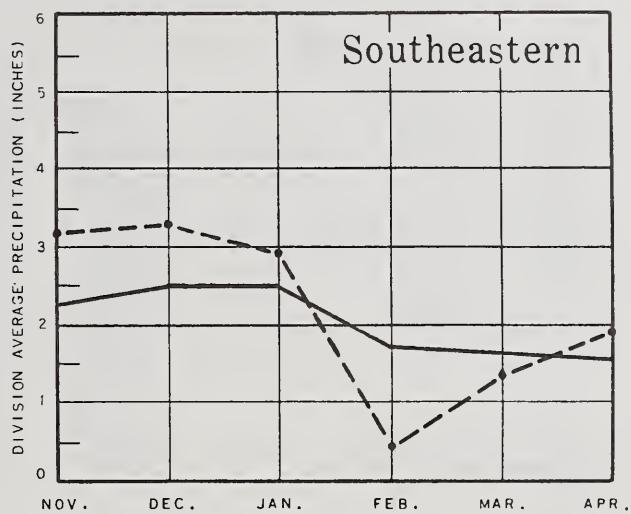
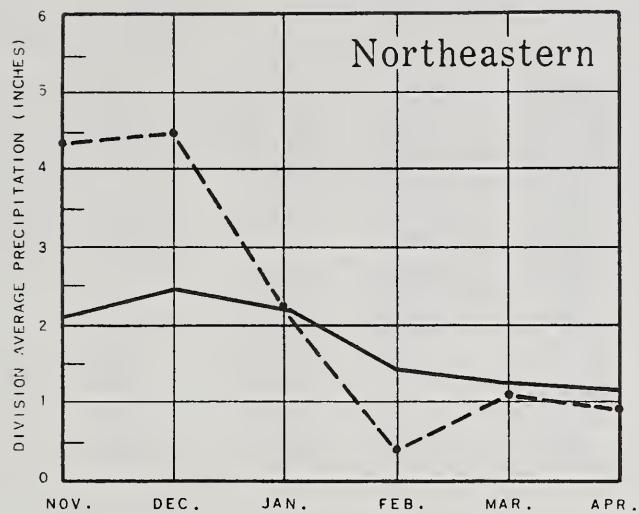
Average —  
1985 - - -

Selected Snow Survey Courses by Soil Conservation Service

# WASHINGTON VALLEY PRECIPITATION

1985

## DRAINAGE AREAS



**Average**  
1985

Preliminary Analysis by National Weather Service

**NOTE: Precipitation to beginning of the month.**

## SNOW DATA TO APRIL 1, 1985 - APPENDIX 1

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average

UPPER COLUMBIA DRAINAGEPEND OREILLE RIVER

Benton Meadow	16A02	2344	3/28	28	8.6	0.0	4.9
Benton Spring	16A03	4900	3/28	69	22.7	15.3	19.8
Boyer Mtn	17A02	5250	4/01	76	27.7	25.2	27.0
Bunchgrass Meadow	17A01	5000	4/05	80	26.6	28.5	30.6
Chewelah	17A04	4925	3/30	56	17.8	17.1	14.7
Hoodoo Basin	15C10	6000	3/29	124	52.4	39.3	52.7
Hoodoo Creek	15C01	5900	3/29	113	46.4	36.2	49.2
Lookout	15B02	5250	3/28	101	37.9	25.4	36.3
Nelson	2D04CA	3050	3/27	52	16.9	8.8	16.1
Schweitzer Bowl	16A06	4500	4/02	76	31.2	22.8	30.2
Schweitzer Ridge	16A05	6100	4/02	112	46.3	42.7	47.9

KETILE RIVER

Barnes Creek	2B06CA	5300	3/26	56	18.6	18.9	20.9
Big White Mtn.	2E03CA	5500	3/31	57	17.6	20.4	20.3
Butte Creek	18A03	4070	3/31	37	9.6	11.6	9.6
Carmi	2E02CA	4100	4/01	20	4.9	5.7	6.6
Farron #1	2B02CA	4000	3/26	39	12.6	13.3	14.1
Farron #2	2B02ACA	4000	Not Measured				
Goat Creek	18A04	3595	3/31	21	4.6	.1	5.5
Monashee Pass	2E01CA	4500	3/26	42	11.2	12.6	14.3
Summit G.S.	18A05	2150	3/31	37	9.1	11.4	8.6
Trapping Creek Lower	2E05CA	3050	4/01	12	3.4	2.6	3.9
Trapping Creek Upper	2E04CA	4450	3/31	29	6.9	8.3	10.2

COLVILLE RIVER

Baird	17A06	3215	3/31	33	10.6	6.5	5.7
Chewelah	17A04	4925	3/30	57	17.8	17.1	14.7
Togo	18A10	3370	3/30	44	11.9	11.4	12.6

OMAK LAKE, TWIN LAKES

Mission	19A11	1150	3/26	0	0		
Mount Tolman	18A12	2000	3/26	0	0		
Twin Lake	18A11	2700	3/26	25	7.9		

# Average based on 1961-1980 averages  
sp SNOTEL data

## SNOW DATA TO APRIL 1, 1985 - APPENDIX 2

SNOW	THIS YEAR			PAST RECORD		
	DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (inches)	Water Content (inches)	Water Content (inches)
	NAME	Number				Last Year
						Average

SPOKANE RIVER

Above Burke	15B08	4100	3/28	65	24.9	14.2	24.0
4th of July Summit	16B03	3100	3/28	43	15.9	5.0	7.9
Lookout	15B02	5250	3/28	101	37.9	25.4	36.3
Lost lake	15B14A	6000	4/02	148	59.9	41.2	58.3
Mosquito Ridge	16A04	5110	4/02	98	39.4	28.2	38.9
Sherwin	16C01	3200	3/28	46	15.9	9.2	13.2
Sunset	15B09A	5600	4/02	82	30.0	22.6	34.3

NEWMAN LAKE

Ragged Ridge	17B02	3333	3/25	33	10.0	0	New
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OKANOGAN RIVER

Aberdeen Lake	1F01CA	4300	3/29	20	5.8	4.6	6.2
Blackwall Peak	2G03CA	6250	3/29	81	28.1	24.9	35.0
Brenda Mine	2F18CA	4800	3/29	45	13.8E	13.2	13.3
Brookmere	1C01CA	3200	3/31	32	7.7	4.2	9.5
Enderby	1F04CA	6250	3/28	88	33.1	40.0	38.9
Esperon Creek Lower	2F15CA	4400	3/31	39	10.6		7.8
Esperon Creek Middle	2F15CA	4700	3/31	47	13.9		14.8
Esperon Creek Upper	2F13CA	5400	3/31	52	16.1		
Grayback Reservoir	2F08CA	5225	3/28	33	7.8	11.6	9.0
Hamilton Hill	2G06CA	4900	3/27	46	12.9	7.4	16.0
Harts Pass	20A05A	6500	3/29	76	33.5	33.1	46.4
Isintok Lake	2F11CA	6300	3/29	29	6.3	5.5	7.9
Lost Horse Mountain	2G04CA	7000	3/29	39	10.6	4.3	9.7
McCulloch	2F03CA	4200	3/29	25	6.4	5.0	6.9
Missoula Mtn.	2G05CA	5100	3/28	37	9.8		9.7
Mission Creek	2F05CA	6000	3/29	56	17.3	20.2	20.7
Monashee Pass	2E01CA	4500	3/26	42	11.2	12.6	14.3
Mount Kobau	2F12CA	5960	3/31	50	12.8	10.9	12.0

# Average based on 1961-1980 averages

s SNOTEL data

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	Last Year	Average

OKANOGAN RIVER (CONT.)

Mutton Creek No. 1	19A01	5700	3/26	35	10.8		11.8
Mutton Creek No. 2 SP	19A11	6000	Not Measured				New
Nickel Plate	2G02CAN	6200	3/29	31	8.2	6.7	9.1
Oyama Lake	2F19CAN	4400	3/29	29	8.5	6.3	7.3
Postill Lake	2F07CAN	4500	3/29	32	7.7	8.3	9.1
Rusty Creek	19A03	4000	3/26	20	5.6	6.1	6.4
Salmon Meadows	19A02	4500	4/01	28	7.2		9.8
Silver Star Mountain	2F10CAN	6050	3/31	74	27.8	28.0	29.1
Summerland Reservoir	2F02CAN	4200	3/29	39	9.4	7.8	9.8
Sunday Summit	2G01CAN	4300	3/26	17	4.7	.4	5.2
Trout Creek	2F01CAN	4700	3/28	29	7.6	3.5	7.6
Vaseux Creek	2F20CAN	4600	3/28	28	5.9	6.9	6.7
White Rocks Mountain	2F09CAN	6000	3/29	57	20.7	23.9	24.2

METHOW RIVER

Harts Pass	20A05A	6500	3/29	76	33.5	33.1	46.4
Mutton Creek No. 1	19A01	5700	3/26	35	10.8		11.8
Mutton Creek No. 2 SP	19A11	6000	Not Measured				12.4
Rusty Creek	19A03	4000	3/26	20	5.6	6.1	6.4
Salmon Meadows	19A02	4500	3/26	28	7.2		9.8

CHELAN LAKE BASIN

Cloudy Pass +	20A22	6500	3/28	20	7.1		47.3
Little Meadows +	20A24a	5275	3/28	110	39.6		45.1
Lyman Lake	20A23	5900	3/28	115	42.4	54.6	61.8
Mirror Lake	30A39	5600	3/28	77	24.9	26.7	10.0
Park Creek Ridge	20A12	4600	4/01		39.7	34.8	45.5
Rainy Pass	20A09	4780	4/01		39.2	30.0	41.8

# Average based on 1961-1980 averages

+ Aerial stadia observation

sp SNOTEL data

## SNOW DATA TO APRIL 1, 1985 - APPENDIX 4

SNOW	DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
				Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	Last Year
	NAME	Number	Elevation					Average

ENTIAT RIVER

Brief	20B19	1600	3/28					3.8
Entiat Meadows +	20A33	4540	3/31	72	24.5	26.2	49.3	
Entiat River Trail +	20A34	3325	3/31	25	8.0	8.2	19.5	
Fox Camp +	20A36	6510	3/31	97	35.9	40.0	59.0	
Pope Ridge	20B20	3450	3/28	45	14.9	13.7	18.6	
Pugh Ridge +	20A32	6725	3/31	57	18.8	23.3	38.5	
Shady Pass	20A37	6200	3/28	63	20.7	24.4	31.4	
Snow Brushy +	20A35	3910	3/31	81	28.4	29.8	35.3	
Tommy Creek +	20B21	4900	3/31	50	16.0	14.2	25.9	

WENATCHEE RIVER

Berne Mill Creek	21B23	3170	3/28	76	27.0	18.8	28.7	
Berne Mill Creek SP	21B41	3240	3/28	67	24.7	13.6	26.7	
Blewett Pass No. 2	20B02	4270	4/01		20.9	11.8	16.4	
Chiwaukum G. S.	20B16	1810	3/28	31	10.0		15.9	
Lake Wenatchee	20B05	1970	Watershed Logged		Discontinued			
Lyman Lake	20A23	5900	4/01		51.2	54.6	61.8	
Merritt	20B18	2140	3/28	39	14.6			
Stevens Pass	21B01	4070	3/28	119	46.2	40.3	53.0	
Stevens Pass Sand Shed	21B45	3700	3/28	85	32.3	25.0	37.5	

COLOCKUM CREEK

Trough #2(SP)	20B25	5310	4/01		9.1sp	3.3	11.9	
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+ Aerial stadia observation

# Average based on 1961-1980 averages

sp SNOTEL data

## SNOW DATA TO APRIL 1, 1985 - APPENDIX 5

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	Last Year	Average

SQUILCHUCK CREEK

Beehive Springs	20B03	4400	3/29	25	7.5	5.1	7.9
Scout-a-Vista	20B04	3400	Not Measured				

STEMILT CREEK

Stimelt Slide	20B06	5000	3/29	34	11.3	9.7	13.6
Upper Wheeler	20B07	4400	3/29	24	6.9	11.0	9.9

YAKIMA RIVER

Ahtanum R.S.	21C11	3100	3/25	20	6.9	3.2	5.8
Big Boulder Creek	21B09	3200	3/26	56	19.6	12.6	18.4
Blewet Pass No. 2	20B02	4270	4/01	43	17.7	11.8	16.4
Bumping Lake Old	21C08	3450	3/28	47	15.1	9.0	15.7
Bumping Lake New	21C36	3400	3/28	52	18.1	12.6	20.6
Cayuse Pass	21C06	5300	3/28	190	74.9	78.6	88.1
Colockum Pass	20B09	5370	4/01	42	15.4	16.8	14.2
Corral Pass	21B13	6000	3/30	102	46.0	31.2	41.3
Fish Lake	21B04	3371	4/01	72	27.3	26.9	34.0
Green Lake	21C10	6000	4/01		13.2sp	26.0	34.6
Grouse Camp	20B11	5385	4/01		17.3sp	15.6	17.1
Lake Cle Elum	21B14	2200	3/27	20	6.6		5.5
Morse Lake	21C17	5400	4/01		46.9sp	46.7	57.5
Olallie Meadows	21B02	3625	3/28	114	45.3	31.7	48.4
Stampede Pass	21B10	3860	4/01		52.3sp	43.5	43.0
Tunnel Avenue	21B08	2450	3/27	57	19.9	11.0	23.7
White Pass E. Side	21C28	4500	3/28	73	23.6	24.4	24.9

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# Average based on 1961-1980 averages  
sp SNOTEL Reading

## SNOW DATA TO APRIL 1, 1985 - APPENDIX 6

SNOW	DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
	NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
							Last Year	Average #

AHTANUM CREEK

Ahtanum R. S.	21C11	3100	3/25	20	6.9	3.2	5.8
Green Lake	21C10	6000	4/01		13.2sp	26.0	34.6

LOWER COLUMBIA DRAINAGEMILL CREEK

High Ridge SP	18D19	4890	2/28	76	28.8sp	0.0	
Touchet # 2 SP	17C55	5530	3/01	98	38.7sp		24.0

COWLITZ RIVER

Cayuse Pass	21C06	5300	3/28	190	74.9	78.6	88.1
White Pass E. Side	21C28	4500	3/28	73	23.6	24.4	24.9

PUGET SOUND DRAINAGEWHITE RIVER

Cayuse Pass	21C06	5300	3/28	190	74.9	78.6	88.1
Corral Pass	21B13	6000	3/30	102	46.0	31.2	43.1
Morse Lake	21C17	5400	4/01		46.9 sp	46.7	57.5

GREEN RIVER

Airstrip	21B24	1800	4/06	0	0.0		1.6
Charley Creek	21B25	1200	3/02	0	0.0	0.0	0.0
Cougar Mountain	21B42	3200	4/01		31.4sp	12.2	20.6
Grass Mtn. No. 2	21B27	2900	4/06	44	17.7	1.0	21.4
Grass Mtn. No. 3	21B28	2100	4/06	0	0	10.0	3.9
Lester Creek	21B29	3100	4/06	68	28.2	13.4	25.9
Lynn Lake	21B50	4000	4/06	70	34.9	15.0	25.1
Sawmill Ridge	21B31	4700	4/06	95	44.0	25.8	39.5
Stampede Pass	21B10	3860	4/01		52.3sp	43.5	43.0
Twin Camp	21C30	4100	4/06	66	30.2	17.3	26.4

# Average based on 1961-1980 averages

sp SNOTEL Reading

## SNOW DATA TO APRIL 1, 1985 - APPENDIX 7

SNOW	DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
	NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
							Last Year	Average

SNOQUALMIE RIVER

Olallie Meadows	21B02	3960	4/01	70.9	31.7	48.4
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SKYKOMISH RIVER

Stevens Pass	21B01	4070	3/28	119	46.2	40.3	53.0
Stevens Pass Sand Shed	21B45	3700	3/28	85	32.3	25.0	37.5

SKAGIT RIVER

Beaver Creek Trail	21A04	2200	3/31	36	12.0	1.2	13.5
Beaver Pass	21A01	3680	3/31	79	28.0	17.9	32.2
Brown Top Ridge	21A28	6000	3/29	132	50.8	46.8	65.7
Devils Park	20A04	5900	3/29	94	34.6	27.6	45.8
Freezeout Creek Trail	20A01	3500	3/31	40	13.0	4.8	12.6
Freezeout Meadow	20A38	5040	3/31	75	26.3	17.9	35.7
Granite Creek	21A29	3500	3/31	59	17.6	9.2	19.2
Harts Pass	20A05A	6500	3/29	76	33.5	33.1	46.4
Klesilkwa	3D03ACA	3710	3/26	44	13.0	1.5	13.5
Lightning Lake	3D02CAN	4000	3/26	39	9.8	7.4	14.3
Lyman Lake	20A23	5900	3/28	115	42.4	54.6	61.8
Meadows Cabin	20A08	1900	3/29	17	5.8		5.8
New Hozomeen Lake	21A30	2800	3/31	37	12.5	1.5	13.2
Rainy Pass	20A09	4780	3/31	93	34.0	30.0	41.8
Thunder Basin	20A07	4200	3/29	67	21.2	10.8	23.5

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# Average based on 1961-1980 averages

sp SNOTEL data

## SNOW DATA TO APRIL 1, 1985 - APPENDIX 8

SNOW	THIS YEAR			PAST RECORD	
	DRAINAGE BASIN and/or SNOW COURSE			Water Content (inches)	
	NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)

BAKER RIVER

Dock Butte +	20A11A	3800			53.0	70.4
Easy Pass +	21A07A	5200			60.0	90.9
Jasper Pass +	21A06A	5400			69.0	89.2
Martin Lake	21A09A	3600			60.0	75.6
Mt. Blum +	21A18A	5800			58.0	63.0
Rocky Creek	21A12A	2100			12.0	29.8
Schreibers Meadow	21A10A	3400			37.0	64.6
S.F. Thunder Creek +	21A14A	2200			0.0	6.6
Watson Lakes	21A08A	4500			48.0	69.1

OLYMPIC PENINSULA DRAINAGEDUNGENESS RIVER

Deer Park	23B04	5200	3/26	61	20.0	11.7	21.4
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MORSE CREEK

Cox Valley	23B14	4500	2/27	90	34.3	26.8	33.9
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ELWHA RIVER

Hurricane	23B03	4500	3/30	65	20.6	14.7	24.4
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WYNOOCHEE RIVER

Carrol Pass	23B15	3650	4/06	98	42.3
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+ Aerial stadia observation

# Average based on 1961-1980 average

## SNOTEL READINGS, APRIL 1, 1985 - APPENDIX 1

## SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average

PEND OREILLE RIVER

Bunchgrass Meadows	17A01	5000	03/15		21.8	23.1	
	GT		03/29	76	27.7		
			03/31		21.0	26.2	38.3

OKANOGAN & METHOW RIVERS

Harts Pass	20A05	6500	03/15		36.6	30.6	
	GT		03/29	92	33.0		
			04/01		42.2	34.7	48.6
Salmon Meadows	19A02	4500	03/15		13.2	17.6	
			04/01		8.1	20.5	32.2

CHELAN LAKE BASIN

Lyman Lake	20A23	5900	03/15		45.7	55.7	
	GT		03/28	115	42.4		
			04/01		51.2	62.1	65.3
Mirror Lake	20A39	5600	03/15		22.9	25.9	
	GT		03/28	77	24.9		
			04/01		25.1	28.5	39.5
Park Creek Ridge	20A12	4600	03/15		36.0	32.6	
	GT		03/28	92	35.8		
			04/01		39.7	35.3	48.3
Rainy Pass	20A09	4780	03/15		33.8		
	GT		03/31		28.0		
			03/31		37.5	32.3	45.2

ENTIAT RIVER

Pope Ridge	20B20	3450	03/15		15.7	16.8	
	GT		03/28	47	15.5		
			04/01		16.1	15.7	16.9

WENATCHEE RIVER

Blewett Pass	20B02	4270	03/15		18.2	17.9	
	GT		04/01	43	17.7		
			04/01		20.9	18.4	21.0
Lyman Lake	20A23	5900	03/15		45.7	55.7	
	GT		03/28	115	42.4		
			04/01		51.2	62.1	65.3
Stevens Pass	21B01	4070	03/15		46.9	33.2	
	GT		03/28	119	46.2		
			04/01		50.9	37.1	23.9
Trough # 2	20B25	5300	03/15		9.0	2.8	
	GT		03/29	34	9.5		
			04/01		9.1	2.0	24.1

GT = Ground Truth measurement at SNOTEL site

## SNOW READINGS, APRIL 1, 1985 - APPENDIX 2

SNOW	THIS YEAR				PAST RECORD	
	DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)
	NAME	Number				Last Year
						Average

COLOCKUM CREEK

Trough # 2	20B25	5300	03/15		9.0	2.8
	GT		03/29	34	9.5	
			04/01		9.1	2.0
						24.1

STEMILT CREEK

Upper Wheeler	20B07	4400	03/15		10.4	13.3
	GT		03/28	45	11.5	
			04/01		11.2	20.0
						18.7

YAKIMA RIVER

Big Boulder Creek	21B09	3200	DISCONTINUED			
Bumping Ridge	21C38	4600	03/15		28.9	26.4
	GT		03/28	87	29.4	
			03/31		32.4	27.9
Corral Pass	21B13	6000	03/15			
	GT		03/30	102	46.1	
			03/31			26.5
Fish Lake	21B04	3371	03/15		30.7	27.5
	GT		03/26	81	27.6	
			04/01		35.5	28.5
Green Lake	21C10	6000	03/15		12.6	17.4
	GT		04/01			
Grouse Camp	20B11	5385	03/15		13.2	18.3
	GT		04/01		15.3.	16.2
Morse Lake	21C17	5400	03/15		17.3	17.6
			04/01		40.3	50.0
Sasse Ridge	21C40	4400	03/15		46.9	55.8
	GT		03/25	94	31.2	
			04/01			80.0
White Pass E. Side	21C28	4500	03/15		23.6	22.0
	GT		03/28	73	23.6	
			04/01		25.9	23.4
						27.0

GT = Ground Truth measurement at SNOTEL site

## SNOW READINGS, APRIL 1, 1985 - APPENDIX 3

SNOW	DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
				Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	Last Year
	NAME	Number	Elevation					Average

AHTANUM CREEK

Green Lake	21C10	6000	03/15		12.6	17.4		
	GT		04/01		13.2	18.3	34.2	

TOUCHET RIVER

Touchet # 2	17C5	5530	03/15		43.9	28.2		
	GT		03/28	104	40.2			
			04/01		47.8	32.5	37.9	

LEWIS RIVER

June Lake	22C09	3200	03/15		46.2			
	GT		04/01		54.9		26.0	
Lone Pine Shelter	21C26	3800	03/15		37.3	32.5		
	GT		04/01		38.5	34.4	44.9	
Plains of Abraham	22C01	4400	03/15		76.7	72.8		
			04/01		91.5	83.0		
Sheep Canyon	22C10	4050	03/15		53.6	33.8		
			04/01		67.8	37.7		
Spencer Meadow	21C20	3400	03/15			19.0		
			04/01			20.7	30.2	
Surprise Lake	21C13	4250	03/15		51.6	47.8		
	GT		03/30		61.5	55.7	55.7	

COWLITZ RIVER

Pigtail Peak	21C33	5900	03/15		41.8	39.3		
	GT		03/31	119	45.0			
			04/01		43.7	44.7	45.8	
Potato Hill	21C14	4500	03/15		31.7	20.0		
	GT		03/31		34.2	20.8		
Sheep Canyon	22C10	4050	03/15		53.6	33.8		
			04/01		67.8	37.7	15.7	
Strawberry Landing	22C08	3280	03/15		54.4			
	GT		04/01		67.8		32.8	
Steppes PC	22C11		03/15					
			03/31					
Spirit PC	22C12		03/15		22.3			
			04/01		17.0			

GT = Ground Truth measurement at SNOTEL sites

## SNOW READINGS, APRIL 1, 1985 - APPENDIX 4

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD	
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Last Year	Average

NISQUALLY RIVER

Paradise Park	21C35	5500	03/15	66.8	28.0
			04/01	73.1	24.5

WHITE RIVER

Corral Pass	21B13	6000	03/15		
	GT		03/30	102	46.0
			03/31		
Morse Lake	21C17	5400	03/15		
	GT		04/01		
				46.9	55.8
					80.0

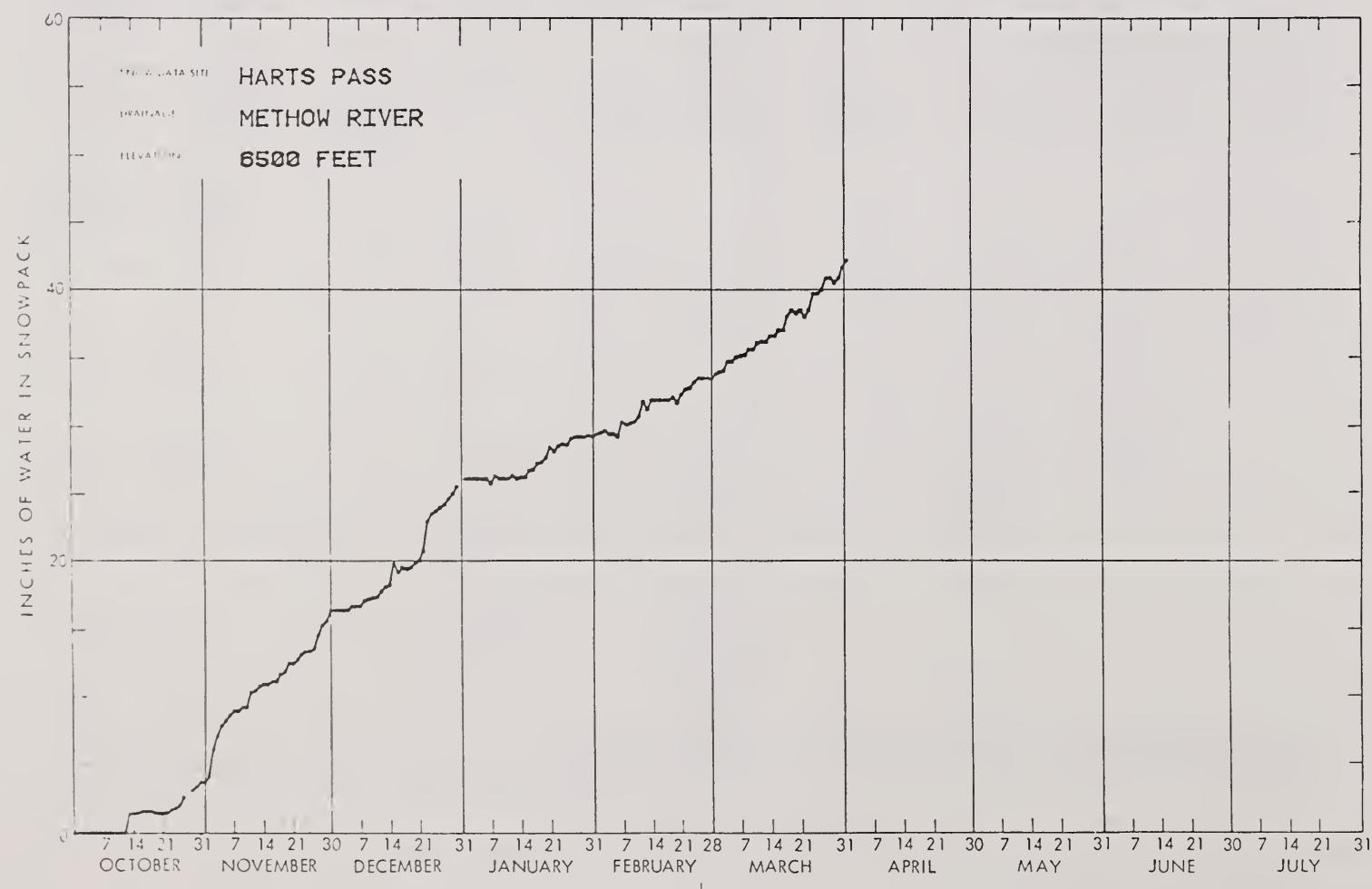
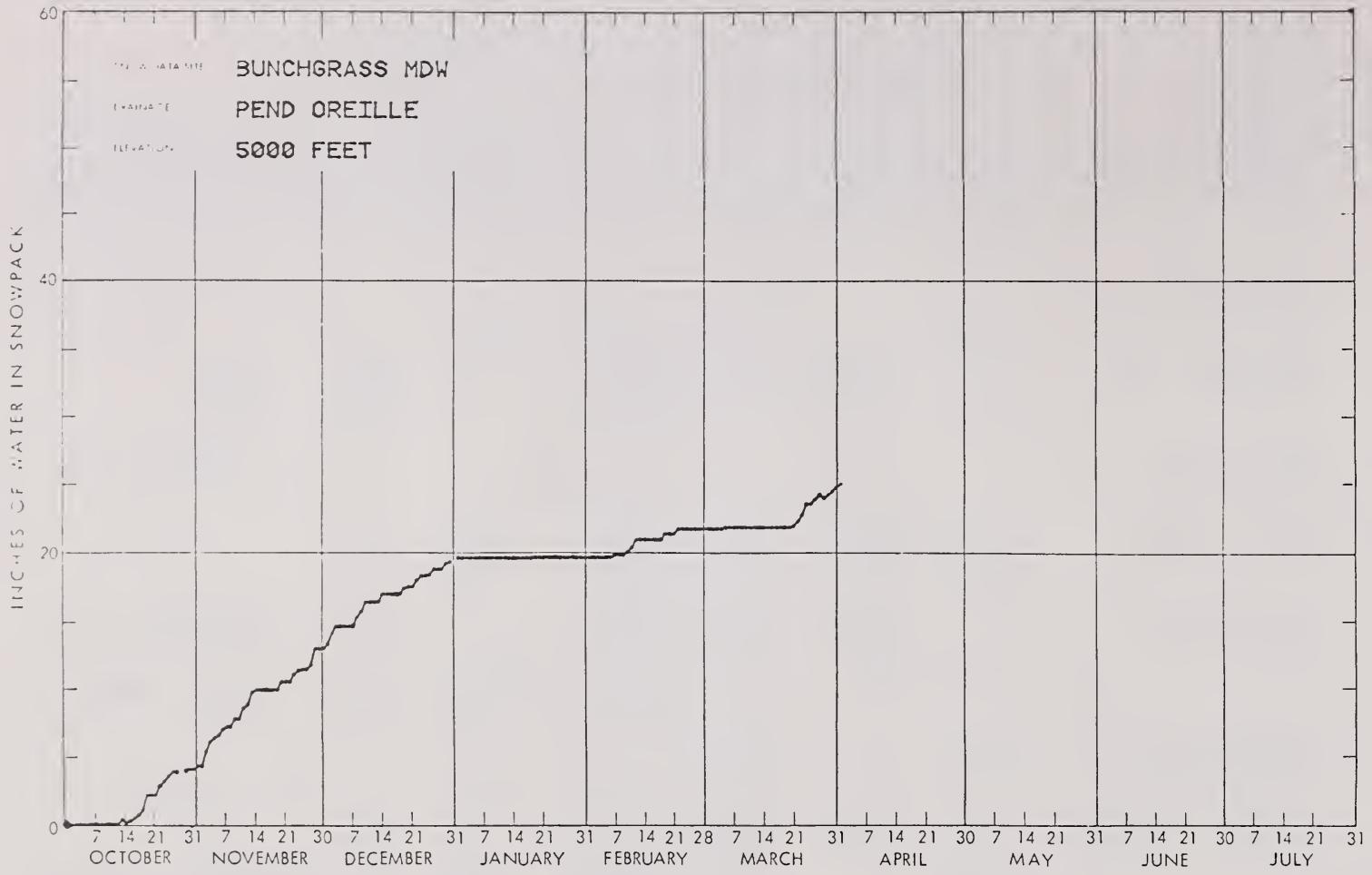
GREEN RIVER

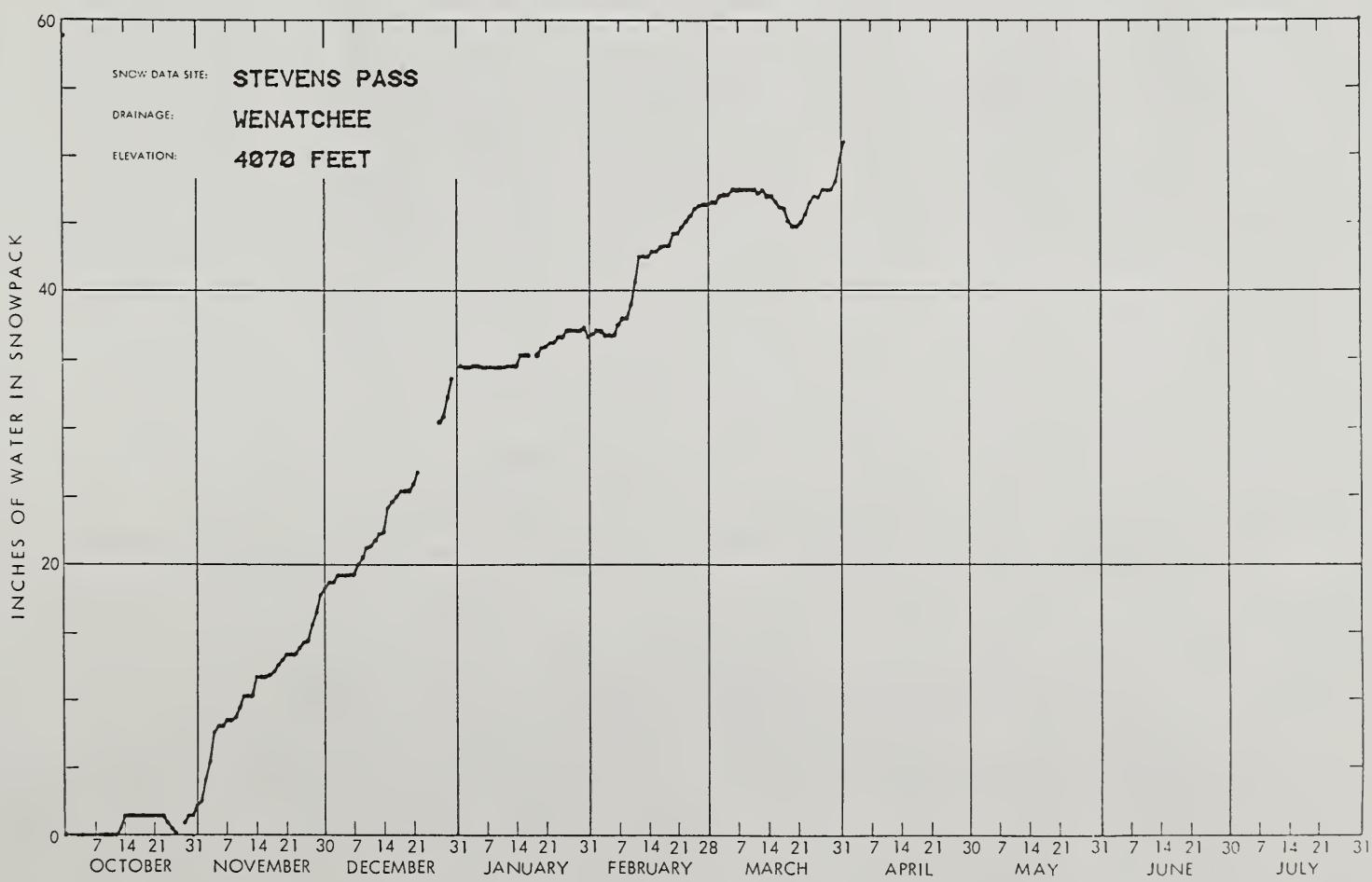
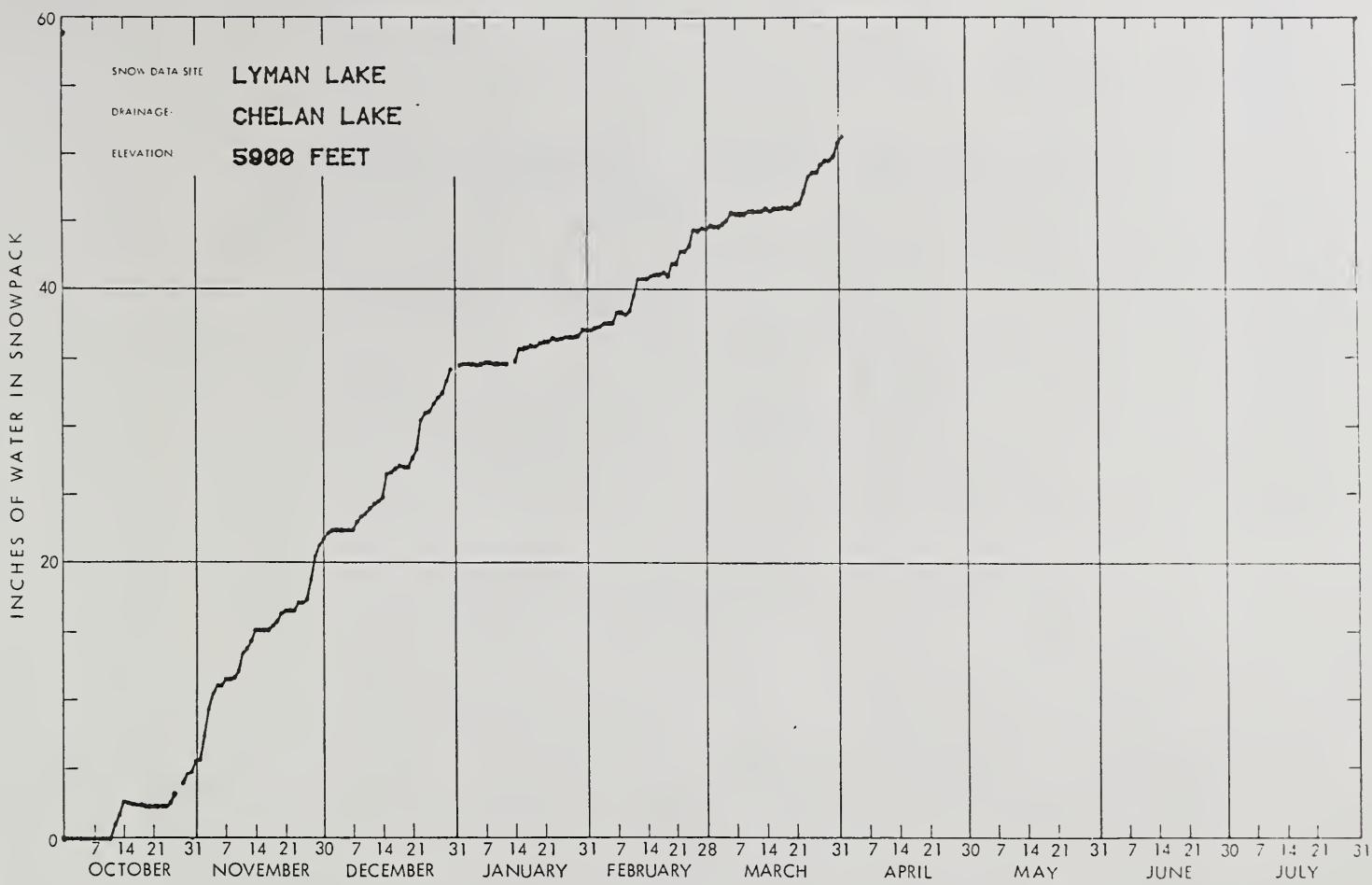
Cougar Mountain	21B42	3200	03/14		
	GT		03/30	83	
			004201		
Stampede Pass	21B10	3960	03/15		
	GT		04/01	117	
			04/01		
				52.3	42.7
					36.2

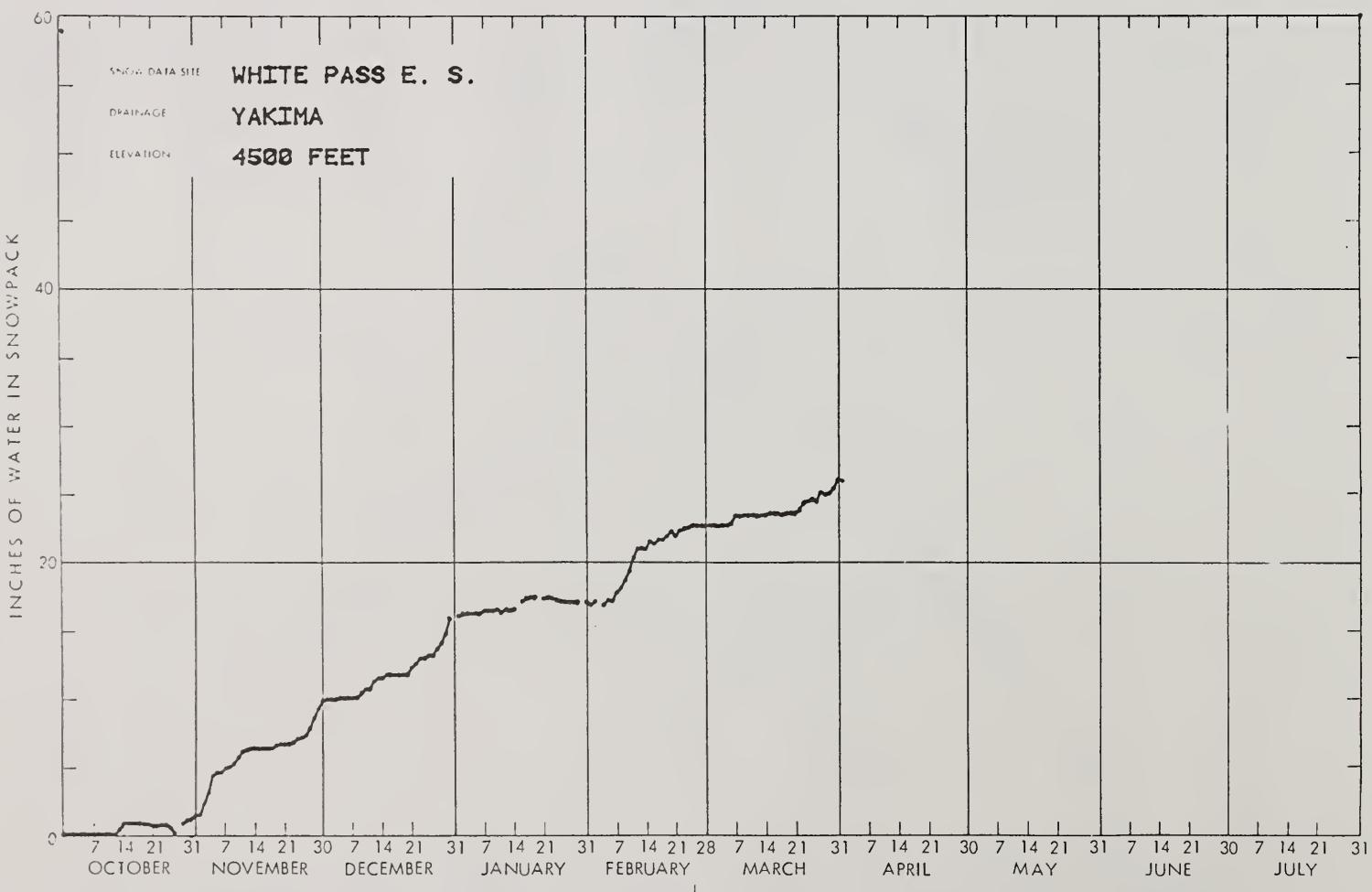
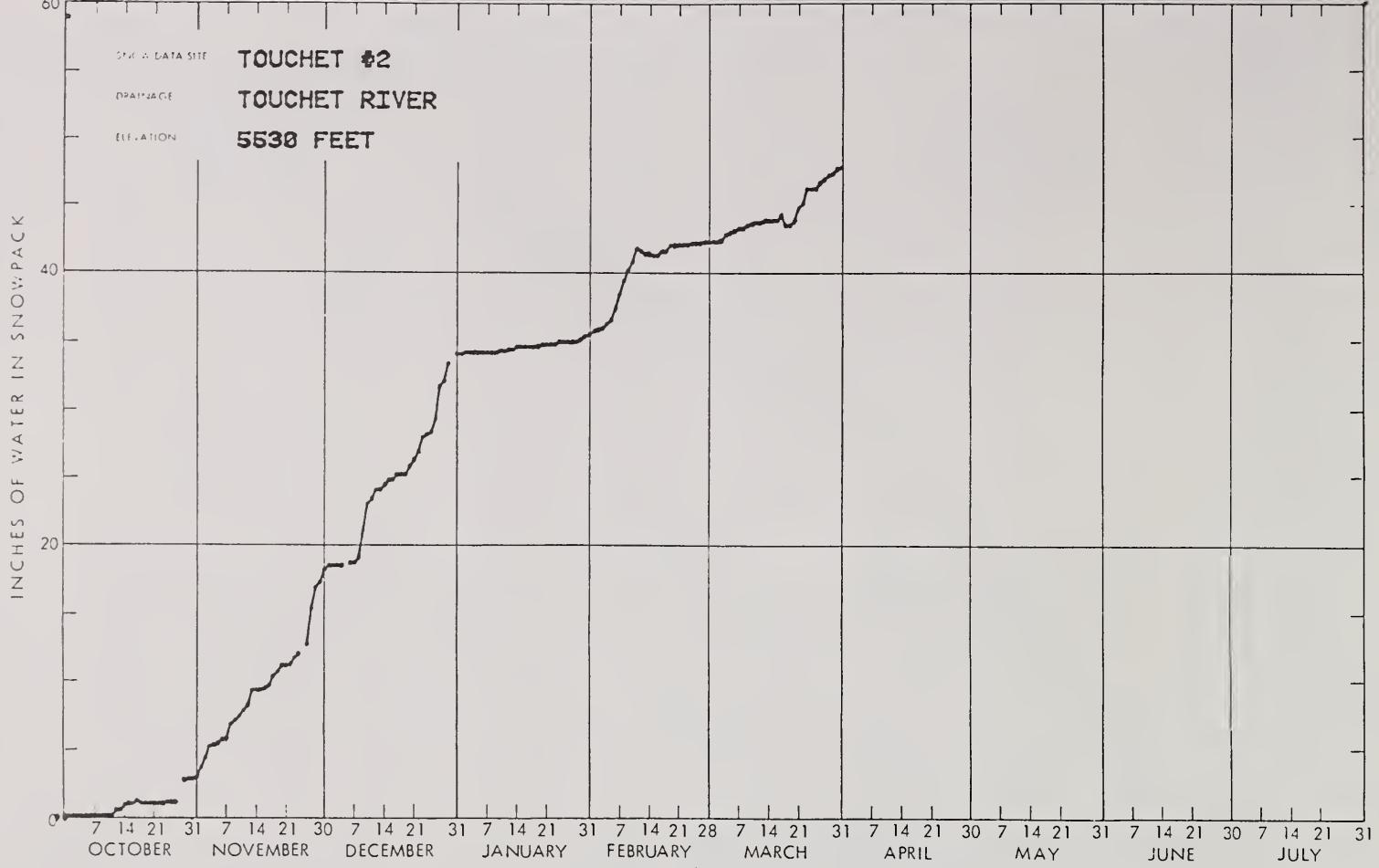
SNOQUALMIE RIVER

Olallie Meadows East	21B55	3960	03/15		
			03/31	60.7	45.2
				71.3	50.7
					49.7

GT = Ground Truth measurements at SNOTEL sites







# Agencies Assisting with Snow Surveys

## GOVERNMENT AGENCIES

### Canada:

Ministry of the Environment, Water  
Investigations Branch, Victoria, British Columbia

### States:

Washington State Department of Ecology  
Washington State Department of Natural Resources

### Federal:

Department of the Army  
Corps of Engineers  
U.S. Department of Agriculture  
Forest Service  
U.S. Department of Commerce  
NOAA, National Weather Service  
U.S. Department of the Interior  
Bonneville Power Administration  
Bureau of Reclamation  
Geological Survey  
National Park Service

## PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.  
Pacific Power and Light Company  
Puget Sound Power and Light Company  
Washington Water Power Company

## OTHER PUBLIC AGENCIES

Okanogan Irrigation District  
Wenatchee Heights Irrigation District

## MUNICIPALITIES

City of Tacoma  
City of Seattle

*Other organizations and individuals furnish valuable information for  
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